

August 22, 2016

Ex Parte

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Petition of General Communication, Inc. for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations between 6425 and 7125 MHz, WT Docket No. 16-209

Dear Ms. Dortch,

On August 18, 2016, Chris Nierman and Kara Azocar of General Communication, Inc. (“GCI”), Paul Caritj of Harris, Wiltshire & Grannis, LLP, and I met with Blaise Scinto, Stephen Buenzow, and Jeffrey Tignor of the Wireless Telecommunications Bureau. We provided an update on GCI’s efforts and investments that provide high-speed Internet access in rural Alaska. We also discussed how the Commission could allow GCI to further invest in providing rural Alaskans with additional capacity in remote villages by adjusting the channel plan in the Upper 6 GHz band.

We described GCI’s TERRA network, which relies on a vast backbone of microwave links to deliver terrestrial high-speed Internet access to remote parts of western Alaska. To do so, GCI constructs repeaters in some of the most isolated locations in the United States. These sites are often unserved by roads or electrical power. Moreover, construction must be completed during Alaska’s extremely short construction season and is subject to arduous permitting requirements. Once built, these towers are exposed to high winds and icing conditions, raising difficult engineering challenges and necessitating far more operating expenses than typical wireless facilities. We also explained that demand in rural Alaska for high-speed Internet access is expanding and that consumer use of the TERRA system will soon exhaust the available capacity of these microwave links.

GCI is working to increase capacity by “ringing” the TERRA backbone. But the engineering challenges associated with these isolated facilities will significantly limit the company’s ability to further expand capacity and coverage to the villages that most need it. The Commission could open up a new path for expanding rural broadband capacity in Alaska by granting GCI’s pending waiver request to operate using 60 MHz channels, in an efficient, uniform channelization plan, from 6425 to 7125 MHz. GCI requests this waiver only in western Alaska, where the larger channels would produce the largest benefit and where spectrum congestion is simply not an issue. Granting this waiver would allow GCI to make additional

investments in new capacity without the potentially prohibitive costs of extensive new tower construction in rural Alaska. We discussed the attached slides illustrating these points.

Expanding access to high-speed Internet, and increasing capacity to meet demand, is of unique importance in rural Alaska. Internet connectivity provides students in these rural areas access to high quality educational materials that would otherwise be unavailable to them. Likewise, many communities in rural Alaska require broadband for healthcare services, especially specialist care. These communities rely on telemedicine to meet their healthcare needs, which itself depends on high-speed, low-latency Internet access.

Expanding the TERRA network is also important to support public safety and to respond to emergency situations in these areas. Many rural communities in Alaska do not have their own local public safety officials, and must rely on communications and coordination with officials in remote locations. Internet connectivity is crucial for ensuring that these lines of communication remain open. TERRA can also provide necessary backhaul services for wireless Internet connectivity. Wireless connectivity is especially crucial in rural Alaska as it is often the only reliable way for individuals in remote areas—such as a worker on a fishing boat, or an individual whose snowmachine has broken down—to summon help in the event of an emergency.

We also discussed the comments filed in response to the Commission's public notice on GCI's waiver petition, and the very limited opposition to GCI's request. Indeed, comments on the public notice were generally positive, with only EIBASS commenting on GCI's proposed use of spectrum currently shared with or set aside for the Broadcast Auxiliary Service ("BAS"). We explained that in the extremely rural areas of Alaska covered by GCI's waiver request, it is highly unlikely that any broadcaster will seek to use the two channels set aside for them between 6975 and 7025 MHz. Moreover, BAS users have access to more than 40 other channels on a shared basis. It may be prudent to reserve two channels in markets where spectrum congestion and numerous breaking news events might exhaust these 40 shared channels. But to continue to allow these channels to lay fallow in rural Western Alaska, when GCI is eager to invest and use them to deliver broadband, is unnecessary and contrary to longstanding Commission spectrum policy. The set aside is not necessary to achieve the goal of the original rule because of the lack of demand for BAS in rural Alaska and the availability of more than 40 other channels in case of emergency need. And permitting GCI to use these frequencies would advance the public interest by expanding and improving broadband in communities where it will support economic growth, education, healthcare, and public safety. A waiver is therefore appropriate.

As we also explained, it is not feasible to build out the TERRA backbone network in western Alaska using fiber. Although GCI does currently use fiber for limited portions of the

Ms. Marlene H. Dortch
August 22, 2016
Page 3 of 3

network, it is unlikely that this can be significantly expanded. Much of the remaining area covered by the TERRA backbone are federal and state lands which are subject to numerous government restrictions on human activity. It is doubtful that GCI could obtain the necessary government authorization to lay fiber through these areas. And even if GCI could obtain the necessary permits, Alaska's unique physical conditions would make a fiber build impractical and uneconomic. Much of Alaska is covered by a thick layer of permafrost. This would not only make the initial trenching process difficult and costly, but permafrost also undergoes structural changes over time which can damage fiber and other buried communications equipment.¹ GCI uses fiber where it can, but it cannot do so in place of the relevant wireless facilities any time in the foreseeable future. If GCI had to address TERRA's future capacity needs via fiber because the FCC did not grant the waiver, the company may not be able achieve the project's goals at all.

The parties also discussed the need for a timely grant of GCI's petition. In addition to Alaska's extremely short construction season, GCI explained that it needs adequate time for vendors to make the radios available, in addition to the time needed to install them throughout the TERRA network. GCI therefore respectfully urges the FCC to approve the petition expeditiously.

Pursuant to the FCC's rules, I have filed a copy of this notice electronically in the above-referenced proceeding. If you require any additional information, please contact the undersigned.

Sincerely,

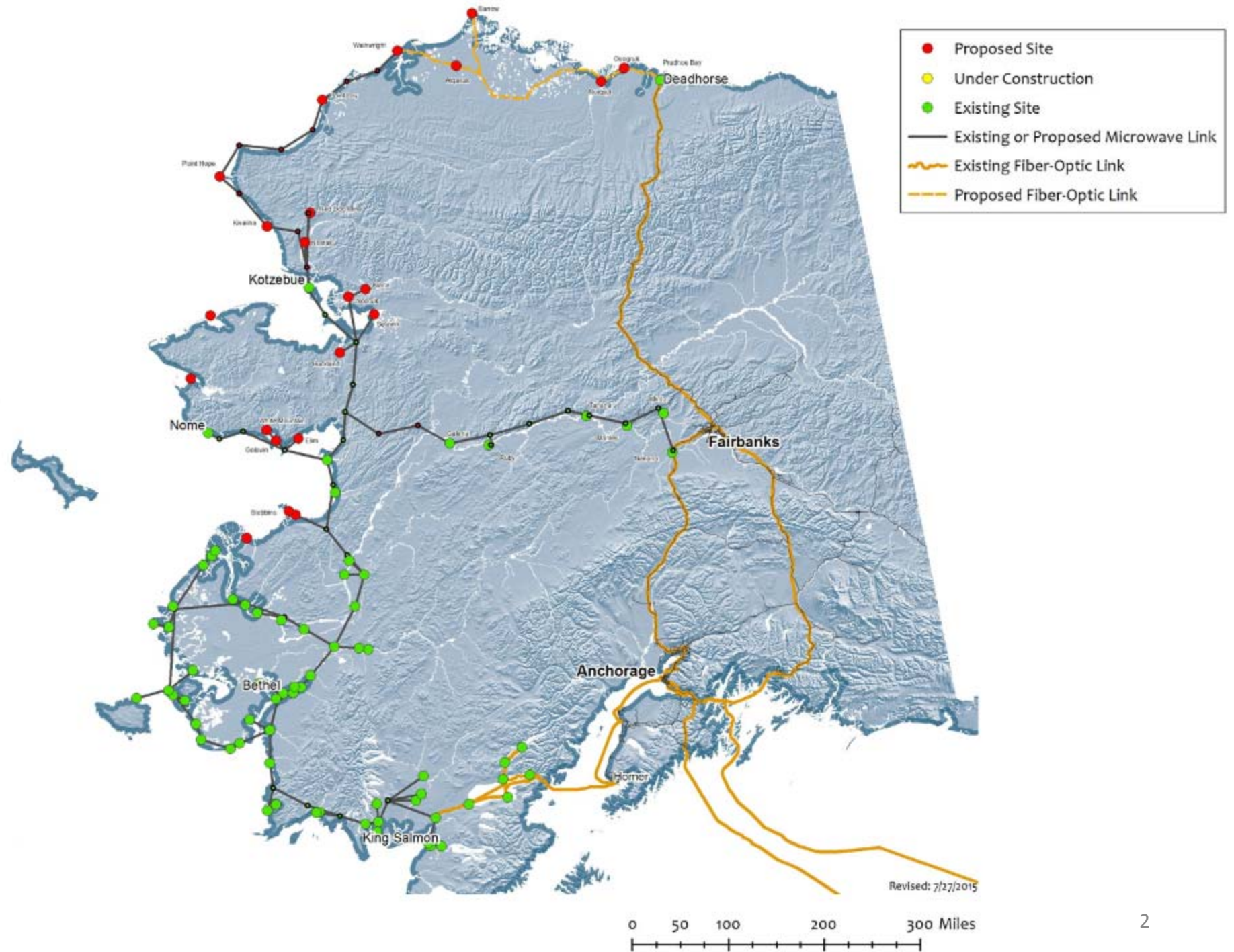
A handwritten signature in cursive script, appearing to read "A.P. Margie".

Paul Margie
Counsel to GCI

cc: Meeting participants

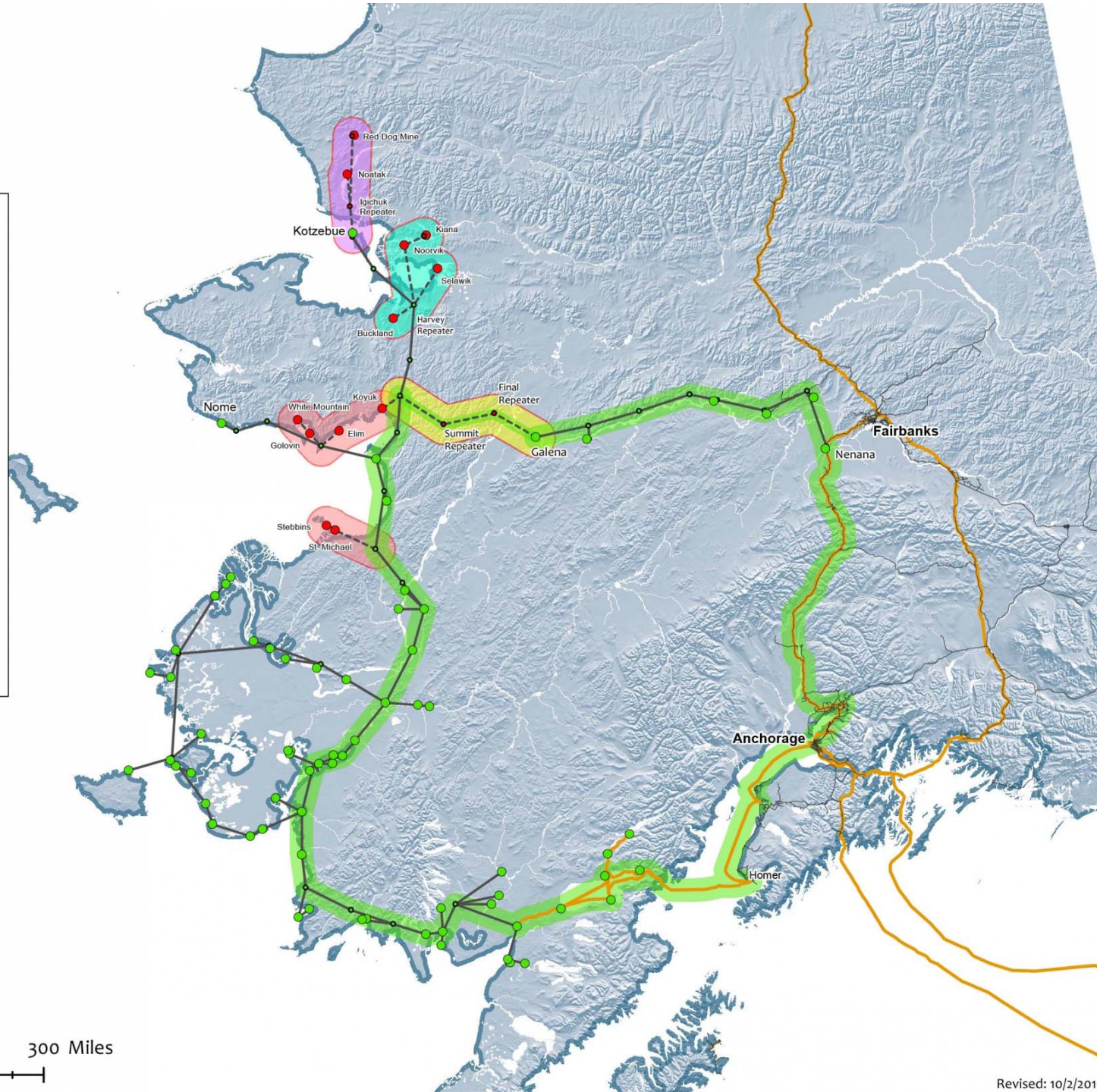
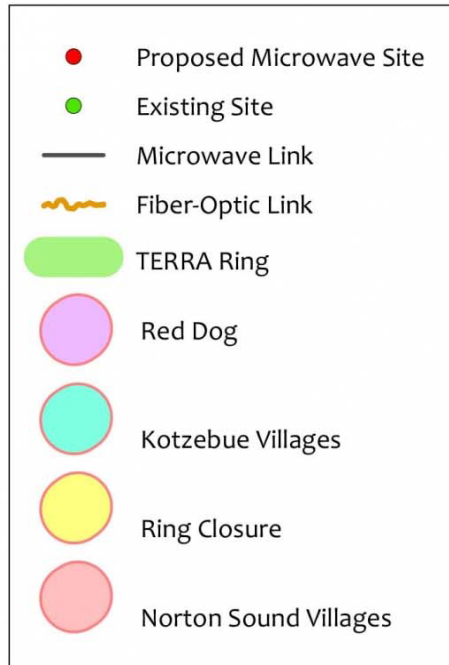
¹ See Petition of General Communication, Inc. for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations between 6425 and 7125 MHz at 6, WT Docket No. 16-209 (filed Apr. 15, 2016) ("GCI Petition").

GCI's TERRA Network

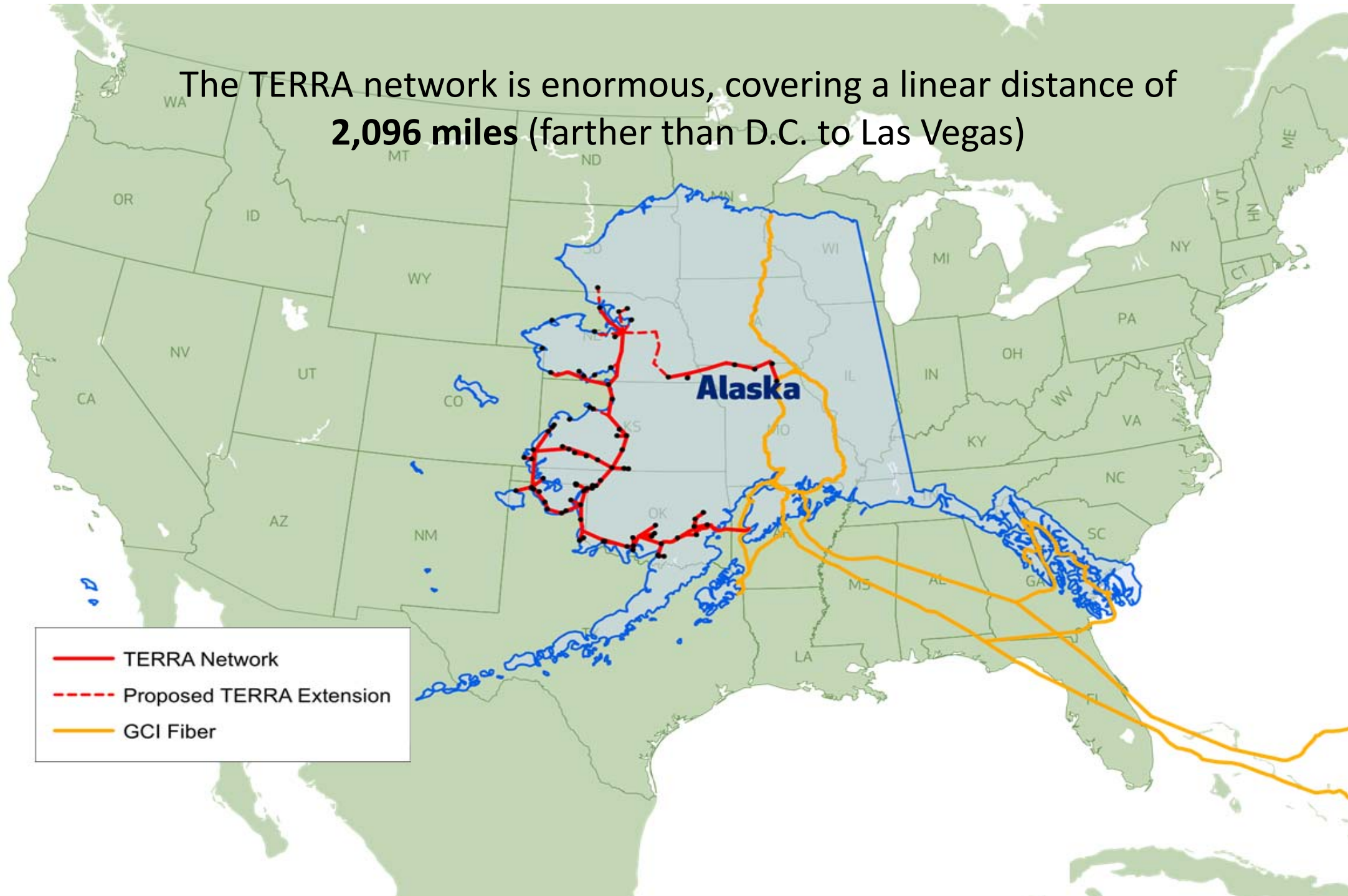


Note: This map represents GCI's long term vision to bring a terrestrial telecommunications network to many areas of rural Alaska. The proposed microwave sites and fiber routes are not funded or financed and only represent a possible future network. Additionally, the proposed microwave sites and fiber routes do not represent all possible future sites and routes in Alaska, and other technologies may be used.

TERRA by GCI
 2016-2017 Construction



The TERRA network is enormous, covering a linear distance of **2,096 miles** (farther than D.C. to Las Vegas)



TERRA Network Construction Challenges

- TERRA covers some of the most remote and hostile terrain in the US.
 - No roads—equipment must often be delivered by helicopter.
 - Construction crews must often live on site in remote shelters.
 - No electrical grid—power generated on-site; fuel delivered by helicopter.
 - Towers must be designed to accommodate extreme winds and ice loading.
- Short construction season means work must be very carefully planned, and can take many years.
- Special environmental permits often required for construction.
- Ice, shifting permafrost, environmental regulations, and other challenges make laying fiber effectively impossible in much of Alaska.

















Current 6 GHz Channelization Plan Limits Capacity and Wastes Spectrum

Frequency Band (MHz)	Maximum Authorized Bandwidth (MHz)
5925 to 6425 (Lower 6 GHz)	60
6425 to 6525 (Upper 6 GHz)	25
6525 to 6875 (Upper 6 GHz)	30
6875 to 7125 (Upper 6 GHz)	25

The FCC Can Support Broadband in Alaska With A Uniform Upper 6 GHz Channelization Plan

- Maximum 60 MHz channelization across the entire Upper 6 GHz band (6425 MHz to 7125 MHz) in western Alaska
- Consistent with ITU-R F.384-11, Recommendation 4.2
- By reducing infrastructure costs needed to achieve maximum throughput, expands coverage by avoiding need to build new towers
- Avoids unused “remainder” spectrum
- Simplifies network design

A Uniform Upper 6 GHz Band Plan Will Produce Real-World Advances in Alaska

Under Current Rules

Band	Max. Bandwidth		Max. Channels*	Max. Capacity (Ringed)
5925-6425	60 MHz		8 x 60 MHz	6262 Mbps
6525-6875	30 MHz		10 x 30 MHz	3914 Mbps
TOTAL			780 MHz	10,176 Mbps

If Waiver is Granted

Band	Max. Bandwidth	Other Restrictions	Proposed Solution	Max. Channels*	Max. Capacity (Ringed)
5925-6425	60 MHz	-	N/A	8 x 60 MHz	6262 Mbps
6425-6525	25 MHz	No Common-Carrier Operations	Permit common-carrier operations and uniform 60 MHz channelization scheme.	10 x 60 MHz	7828 Mbps
6525-6875	30 MHz	-	Permit uniform 60 MHz channelization scheme.		
6875-7125	25 MHz	BAS Set-Aside in 6975-7025 MHz	Permit uniform 60 MHz channelization scheme and allow use of otherwise unused BAS channels.		
TOTAL				1080 MHz	14,090 Mbps

*Vertical and horizontal polarizations counted as separate channels.